

REMARKS

Claims 1-21 stand rejected in the outstanding Official Action. Claims 1, 5, 8, 9, 18 and 19 have been amended and newly written claims 22-29 offered for consideration. Accordingly, claims 1-29 are the only claims remaining in this application.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page/s is/are captioned "**Version With Markings To Show Changes Made.**"

The Examiner's acknowledgment of applicants' claim for priority is very much appreciated. Attached hereto is a certified copy of applicants' priority document. Acknowledgment of receipt of the priority document and perfection of the claim for foreign priority is respectfully requested.

The Examiner's consideration and acknowledgment of the prior art cited on PTO Form 1449 submitted by applicants on September 23, 1999, is also very much appreciated.

Claims 8 and 9 stand objected to in the outstanding Official Action. With respect to claim 8, the Examiner objects to the phrasing "and of housing elastic means" and "the said slide." With respect to the latter, the word "the" has been deleted, thereby obviating the basis for the objection. With respect to the former, it should be understood that the enclosure accomplishes two functions: it firstly supports the slide so that it is free to move and secondly it houses an elastic means in engagement with the slide to keep the slide in the second position. Thus, the original language, an enclosure capable "of supporting said slide so that it is free to slide, and [capable] of housing elastic means in

engagement with the slide" was perfectly correct. However, to remove any indefiniteness with respect to the "capable of" language, applicants have amended claim 8 to recite an enclosure "supporting said slide for slidable movement and housing an elastic means in engagement with said slide." It is submitted that these changes obviate any remaining indefiniteness with respect to claim 8.

In claim 9, the Examiner objects to the language as allegedly lacking proper antecedent basis. It is noted that claim 5 recites "at least one optical fibre" and claim 9 refers to "said optical fibre." Claim 5 provides complete and proper antecedent basis for the term as used in claim 9. However, consistent with the Examiner's suggestion, applicants have amended claim 9 to recite "said at least one optical fibre." However, it is noted that the original language met all PTO and statutory requirements and no statutory objection under 35 USC §112 was made by the Examiner.

With respect to the above amendments to claims 8 and 9, any perceived objections to the claims have been clearly overcome.

Claims 1-4 and 18 stand rejected under 35 USC §102 as being anticipated by Murakami (U.S. Patent 5,032,718).

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Applicants' invention is not an optical apparatus, but rather a device for releasably connecting an optical fibre to an optical apparatus. Claim 1 has been revised to clearly

recite this fact, including the detailed recitation of the photo-element structure in the optical apparatus which is mounted on a support element to which it is desirable to connect the at least one optical fiber.

Claim 1 specifies a "means for releasably connecting" which, in accordance with Federal Circuit precedent, must be construed to cover the corresponding structure disclosed in applicants' specification and equivalents thereof. Claim 1 further limits the releasably connecting device to being at least partially made from a transparent material, which makes a region of the coupling between the optical fibre and the photo-element externally visible. This provides the clear benefit of applicants' invention, i.e. a releasable connection which can be externally viewed by an operator in the event there is a need to check the fiber optic/photo-element interconnections.

Thus, in order to anticipate applicants' claim 1, it is incumbent upon the Patent Office to establish that the cited prior art, i.e. Murakami, teaches a device which includes (1) a means for "releasably connecting" the optical fibre to the photo-element, and (2) a portion of which makes a region of the coupling between the optical fibre and the photo-element externally visible.

Murakami fails to teach either structural recitation contained in independent claims 1 and 18. The fibers are not releasably connected and, indeed, are in fact embedded in transparent substrate 1. Furthermore, inasmuch as the photo-element in Murakami comprises electrode 2, semiconductor 3 and electrode 4, it is not clear how the connection or coupling between the photo-element and the fiber optic cable can be seen (unless it is the Examiner's contention that a side view in the fashion of Figure 1 would

allow a view of selected fiber/photo-element couplings through the remainder of transparent substrate 1. However, if this is the Examiner's contention, it should also be noted that applicants' independent claim 1 specifies the type of optical apparatus to which the device releasably connects the fiberoptic fibres, i.e. an optical device in which "at least one photo-element [is] mounted on a supporting element."

If the Examiner construes transparent substrate 1 to be a portion of the "means for releasably connecting," then it cannot be the supporting element for the photo-element making up the optical apparatus to which the fibre optic element is to be releasably connected. In fact, Murakami teaches that the photo-element comprising electrode 2, semiconductor 3 and electrode 4 "are formed on the substrate 1 in this order." (Column 2, lines 30 and 31). Thus, Murakami in its failure to teach the claimed means for releasably connecting and/or a portion of the device for releasably connecting the optical fibre being transparent (so as to provide an external view of the coupling), thus clearly fails to anticipate or render obvious applicants' claimed combination of elements.

The Examiner's recitation in section 3 of the Official Action alleging that elements 2, 3 are the "supporting element" is incorrect. As a review of the Murakami specification will clearly disclose, item 2 is "a first transparent electrode 2" and item 3 is a "semiconductor layer 3" (column 2, line 28). Thus, these elements may make up the photo-element, but do not comprise a supporting element for a photo-element. Accordingly, there is no support for the Examiner's rejection of claims 1-4 and 18, either as originally submitted or as amended above and any further rejection thereunder or under 35 USC §103 is respectfully traversed.

Inasmuch as claims 2-4 all depend from claim 1, they are clearly patentable over the Murakami reference and further discussion of the individual features recited in those claims is believed unnecessary.

Claims 5, 8-10 and 12 stand rejected under 35 USC §102 as being anticipated by Welber (U.S. Patent 4,605,280). In addition to several minor amendments, applicants have added a paragraph indent to claim 5 at the point where the connecting device is defined. Prior to that point, the claim describes the optical apparatus which is to be connected to the optical fibre by the device for connecting. It can be seen that both in original claim 5 and amended claim 5, the optical apparatus is specified as having at least one photo-element and at least one supporting element provided with a guide hole for the at least one optical fibre.

The device is defined as comprising a slide provided with at least one slot, the slot movable between first and second predetermined positions, where in the first position, the slot is coaxial with the hole in the supporting element (of the optical apparatus) and in the second position, the slot is out of alignment with the hole in the supporting element and exerts a force which keeps the optical fibre secured in the hole in the supporting element on the optical apparatus.

This claimed structure is simply not present in the Welber patent. The Examiner refers to "supporting element (28) provided with at least one guide hole (38)" at line 6 of section 4 in the Official Action, presumably suggesting that this discloses applicants' claimed supporting element with guide hole. However, it can be seen from Figure 4 that in the engaged position, the optical fibre 24 is not "coaxial with said hole of said

supporting element" in Welber. In fact, due to the size difference between the hole 38 (labeled 37 in Fig. 4) and fibre optic cable 24, there is no structure or slot or other means for having the fibre optic cable coaxial with the hole in any condition of Welber.

Assuming that notch 46 is the "at least one slot" as contended by the Examiner, the slide must be movable between first and second positions, where in the first position the cable is coaxial with the hole and a second position where the slot is "out of alignment" with the hole and exerts on the optical fibre a force keeping the optical fibre secured in the hole. In Welber, the force keeping the fibre located is the compressive force between notch 46 opening downward and notch 64 opening upward. Notch 64 is forced upward towards notch 46 to secure the end of the fibre optic cable therebetween (under the bias of the disclosed springs 82). The Examiner has failed to show how or where there is any disclosed position of the slide in which the "hole" is coaxial with the "slot" in the slide, as specified by applicants' independent claim 5.

Should the Examiner contend that the position in Figure 4 is the second position in which the slot is "out of alignment with said hole," there is no claimed "stop" defining that position as set forth in amended claim 5. The position of the movable slide is governed by whether or not there is a fibre located between the two opposing notches and if there is no fibre, presumably the lower notch is freely movable until it contacts the upper notch, but there is certainly no stop limiting its movement so that the fibre is out of alignment with the hole.

Finally, while the fibre extends through hole 38, there is no structure to provide any "force which keeps the at least one optical fibre secured in said hole." The fibre is

instead secured in the opposing notches and not secured in the hole, if the Examiner's reference is to hole 38. Thus, while superficially similar to applicants' independent claim 5, Welber actually teaches a completely different structure and cannot anticipate or render obvious the subject matter claimed in applicants' independent claim 5.

Inasmuch as claims 8-10 and 12 all depend ultimately from claim 5, the above comments distinguishing claim 5 from the Welber reference are herein incorporated by reference. Inasmuch as Welber fails to anticipate or render obvious the subject matter of claim 5, it is deemed unnecessary to point out the additional structures set out in claims 8-10 and 12 which are also absent from the Welber reference.

Claims 6, 7, 11, 19 and 20 stand rejected under 35 USC §103 as unpatentable over Welber. Inasmuch as claims 6, 7 and 11 ultimately depend from claim 5, the above discussion distinguishing claim 5 from the Welber reference is herein incorporated by reference. Claim 19 is an independent claim, with claim 20 dependent thereon. Claim 19 specifies an optical apparatus comprising at least two photo-elements, a slide provided with two slots, but the slide having otherwise similar limitations of the coaxial alignment and out-of-alignment as set out in claim 5. As noted above, these limitations are clearly not present in the Welber reference. Moreover, applicants have amended claim 19 to specify that the second position is defined by stops and there is simply no disclosure in Welber of any stops, as noted above.

The Examiner's admission that "Welber et al. do not disclose two optical fibres, two photo-elements, two holes or two slots" is appreciated. While it is the Examiner's suggestion that it would only require routine skill in the art, the burden is upon the

Examiner to establish how or why one would seek to modify Welber in the fashion of applicants' claim 19. This has not been done and therefore there is an additional basis upon which applicants rely for patentability of claims 19 and 20 over the Welber reference. Any further rejection of claims 6, 7, 11, 19 and 20 over Welber is respectfully traversed.

Claims 13-17 and 21 stand rejected under 35 USC §103 as unpatentable over Welber in view of Kato (U.S. Patent 5,555,333). Inasmuch as claims 13-17 ultimately depend from claim 5, the above comments distinguishing claim 5 from the Welber reference are herein incorporated by reference. Similarly, because claim 21 depends from claim 19, the above comments distinguishing claim 19 from the Welber reference are herein incorporated by reference.

The Examiner's admission that "Welber et al. do not disclose the slide, cover and supporting element is made from a transparent material" is very much appreciated. The Examiner suggests that Kato discloses making the substrate "from transparent glass" (section 8, line 7 of the Official Action). However, in addition to making substrate 22 of transparent material, Kato also teaches that the fibre optic coupling area uses a metal layer 32 deposited so as to cover the surface of the groove 25 as a reflective coating. It can be seen that the substrate 22 covers the ends of the fibre optic cables (as shown in Figures 11, 12A-12D). Where it covers the end, the metalized coating (shown in Figures 10A and 10B) clearly prevent any visibility of the coupling area and therefore Kato cannot supply any disclosure of the coupling being externally visible in the independent claims 1 and 18. While Kato is not currently applied in any rejection of those claims, the

above observation is offered to avoid the application of an erroneous rejection in the future.

To the extent that claims 13-17 and 21 require the slide cover and supporting element to be made from transparent material, Kato clearly does not support such a disclosure, because he teaches the metalized (and therefore reflective) coatings noted above. Moreover, the Examiner has failed to provide any discussion indicating that there would be any reason or motivation for one of ordinary skill in the art to combine the Welber and Kato references.

The burden is upon the Patent Office to establish a *prima facie* case of obviousness and establishing such a case, it is required that the Examiner demonstrate the motivation for one of ordinary skill in the art to pick and choose elements from the different references and to combine them in the fashion of applicants' claims. The Examiner apparently ignores the fact that while Welber teaches a removable connection, Kato does not teach a releasable connection of fibres, and indeed Kato specifically teaches that the fibres not be releasable connected and instead are permanently connected by means of an adhesive (column 10, lines 27 and 28). The use of an adhesive to permanently connect the fibres is the direct opposite of Welber's releasably connective feature.

How or why one of ordinary skill in the art would utilize the Welber releasable feature instead of Kato's permanent attachment feature is not seen and not explained by the Examiner's Official Action. As a result, there is simply no basis for combining the Welber and Kato references with respect to claims 13-17 and 21.

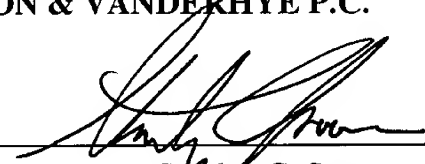
Applicants, in addition to submitting the certified copy of the priority document, also add newly written claims 22-29 directed to further embodiments of the claimed invention. It is noted that these claims either depend from claims which are described as allowable as noted above, or contain limitations discussed as distinguishing over the prior art of record. Entry and consideration of these newly written claims is respectfully requested.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-29 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of these claims, he is respectfully requested to contact applicants' undersigned representative.

Respectfully submitted,

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Attachment:
Submission of Priority Document

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claim 1 (*Twice Amended*) [Device] A device for [securing] releasably connecting at least one optical fibre to an optical apparatus[, where said optical apparatus [comprising] comprises at least one photo-element mounted on a supporting element [and], said device including means for releasably connecting said at least one optical fibre [connectable] to said at least one photo-element [by means of said securing device], wherein at least a part of said [securing] device is made from a transparent material [which makes] making a region of [the] coupling between the at least one optical fibre and the at least one photo-element externally visible.

Claim 5 (*Twice Amended*) Device for [securing] connecting at least one optical fibre to an optical apparatus, said optical apparatus comprising at least one photo-element, said at least one optical fibre connectable to said at least one photo-element, and at least one supporting element provided with at least one guide hole for said at least one optical fibre, wherein said device comprises

a slide provided with at least one slot, said slide moveable between a first and a second predetermined position, said second position being defined by stops, said slot, in said first position of said slide, being coaxial with [the] said hole of said supporting element and freely housing said at least one optical fibre, and said slot, in said second position of said slide, being out of alignment with said hole and exerting on said at least one optical fibre a force which keeps the at least one optical fibre secured in said hole.

Claim 8 (*Twice Amended*) Securing device according to claim 5, wherein said device comprises a cover provided with at least one hole for the passage of said optical fibre, said cover being provided with an enclosure [capable of] supporting said slide [so that it is free to slide] for slidable movement, and [of] housing an elastic means in engagement with [the] said slide to keep [it] said slide in said second position.

Claim 9 (*Twice Amended*) Securing device according to claim 5, wherein said slot comprises a semi-circular portion having a radius greater than a radius of said at least one optical fibre.

18. (*Amended*) Device for [securing] releasably connecting at least one optical fibre to an optical apparatus, said optical apparatus comprising at least one photo-element mounted on a transparent supporting element [and] , said device including means for releasably connecting said at least one optical fibre [connectable] to said at least one photo-element [by means of said securing device], wherein said [securing] connecting device [comprises] includes a cover made of a transparent material making a region of [the] coupling between said at least one optical fibre and the photo-element externally visible.

19. (*Amended*) Device for [securing] connecting at least two optical fibres to an optical apparatus, said optical apparatus comprising at least two photo-elements, said at least two optical fibres connectable to said at least two photo-elements, and at least one supporting element provided with at least two guide holes for said at least two optical fibres, wherein said device comprises:

a slide provided with at least two slots, said slide moveable between a first predetermined position and a second predetermined position, said second position being defined by stops, said slot, in said first position of said slide, being coaxial with the said at least two guide holes of said supporting element and freely housing said at least two optical fibres, and said slots, in said second position of said slide, being out of alignment with said holes and exerting on said optical fibres a force which keeps the optical fibres secured in said hole;

a spring for biasing said slide towards said second position; and

a cover provided with at least two holes for the passage of said at least two optical fibres, said cover slidably supporting said slide.

--22. (New) Connecting device according to claim 5, wherein said at least one photo-element is mounted on said supporting element.

23. (New) Optical equipment comprising:

an optical apparatus comprising at least one photo-element,

at least one optical fiber, and

a device for releasably connecting said at least one optical fibre to a respective one of said at least one photo-element,

wherein at least a part of said releasably connecting device is made from a transparent material in order to make a region of coupling between the at least one optical fibre and the at least one photo-element externally visible.

24. (New) Optical equipment according to claim 23, wherein said transparent material is selected from the group comprising glass, polycarbonate (PC), polymethyl methacrylate (PMMA), polystyrene (PS), acrylonitrile-styrene (SAN), acrylonitrile-butadiene-styrene (ABS), polyphenylene oxide (PPO), polyurethane (PUR), polysulphone (PSU), polyamide (PA), polyvinyl chloride (PVC), and polyphenylene sulphide (PPS).

25. (New) Optical equipment according to claim 23, wherein said optical apparatus comprises a supporting element for said at least one photo-element; said supporting element being made from transparent material.

26. (New) Optical equipment comprising:

at least one optical fiber,

an optical apparatus comprising at least one photo-element, and a supporting element provided with at least one guide hole for a respective one of said at least one optical fibre, and

a device for connecting said at least one optical fibre to a respective one of said at least one photo-element,

wherein said connecting device comprises a slide provided with at least one slot, said slide being movable between a first and a second predetermined position, said second predetermined position being defined by stops, said at least one slot, in said first position of said slide, being coaxial with said at least one hole of said supporting element and freely housing said at least one optical fibre, and said at least one slot, in said second position of said slide, being out of alignment with said at least one hole and exerting on

said at least one optical fibre a force which keeps said at least one optical fibre secured in said at least one hole.

27. (New) Optical equipment according to claim 26, wherein said slide is made from transparent material.

28. (New) Optical equipment according to claim 26, wherein said connecting device further comprises a cover, said cover is provided with at least one hole for the passage of said at least one optical fibre and with an enclosure, said enclosure supporting said slide for slidable movement and housing elastic means to maintain said slide in said second position.

29. (New) Optical equipment according to claim 28, wherein said cover is made from a transparent material.--